

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office on November 4, 1996.

  
Nancy J. Robins

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Lynn E. Spitler et al.

Serial No.: 08/288,057

Filing Date: 10 August 1994

For: PROSTATIC CANCER VACCINE

Examiner: P. Gambel

Group Art Unit: 1816

**DECLARATION OF ROBERT OLDHAM, MD  
PURSUANT TO 37 C.F.R § 1.132**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

I, Robert Oldham, MD, declare as follows:

1. I am the Director of the Biological Therapy Institute in Franklin, Tennessee. A copy of my *Curriculum Vitae* is attached hereto as Exhibit A. I am a consultant to Jenner Technologies, the assignee of the present application.

2. I have reviewed the Declaration Under 37 C.F.R. 1.132 prepared by Dr. Lynn E. Spitler describing the results of a clinical study directed to the use of prostate specific antigen (PSA) as an active ingredient in an antiprostata cancer vaccine. I am also familiar with the study itself, and with the results that were obtained.

3. The purpose of the study was to obtain evidence that the vaccines would raise a sufficient cellular immune response to have a beneficial effect with respect to prostate tumors. Such a result could be shown directly by measuring cytotoxic lymphocyte (CTL) generation; however, I am aware that this was not possible in these studies because the assay was not satisfactory because of the lack of an appropriate target cell for the assay.


4. The responses measured are understood in the art to be satisfactory substitutes for measuring CTLs. Thus, the proliferation of lymphocytes from two of the patients in response to contact with PSA or in response to peptides representing putative PSA epitopes is indicative of an appropriate cellular immune response. The ability of PSA or PSA derived peptides to stimulate cytokine production -- i.e., gamma interferon and IL-4 production -- from lymphocytes in these patients also indicates that the cellular response is obtained specifically with respect to PSA. The observation of the development of a positive skin test response to PSA in one patient is also consistent with these observations showing the development of cell-mediated immunity in the patients.

5. In my opinion, the results obtained in this clinical study provide evidence that the vaccines are likely to be effective in exerting a beneficial effect on patients with prostate tumors or at risk for prostate tumors.

6. The efficacy shown for the vaccine tested in the foregoing clinical studies further provides evidence that analogous vaccines based on host tissue antigen, such as prostate specific membrane antigen (PSMA) and prostate acid phosphatase (PAP) would behave in a similar manner. It is also well known that if the entire antigen is effective as a vaccine, portions of the antigen will be effective as well, especially if manipulated by art-known methods to enhance their immunogenicity, such as by coupling them to carrier.

7. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

October 10, 1996

  
Robert Oldham, MD

Revised: 10/1/95

**CURRICULUM VITA**

**Name:** Robert K. Oldham, M.D

**Permanent Address:** 357 Riverside Drive  
Franklin, Tennessee 37064  
615/791-4073

**Social Security #:** 500-40-8139

**Date/Place of Birth:** 9/16/41; Pocatello, Idaho

**Marital Status:** Single (5 sons)

**College:** University of Missouri, Columbia, MO  
Chemical Engineering  
Pre-Medical Sciences

**Medical School:** 1968, Medical Degree  
University of Missouri  
Columbia, Missouri

**Graduate Training:** 1970-1971 Immunology  
NIH Graduate Program

**Professional Employment**

1991 - Present      Chairman of the Board and President  
Cancer Therapeutics Inc.  
357 Riverside Drive  
Franklin, Tennessee 37064

1992 - Present      Chairman of the Board and President  
American Patient Services  
357 Riverside Drive  
Franklin, Tennessee 37064

1986 - Present      Chairman of the Board  
Media America  
357 Riverside Drive  
Franklin, Tennessee 37064

**Consultant:**

- 1984 - 1986 Wellcome Biotechnology Ltd.  
Kent, England
- 1989 - Present Amersham International  
Buckinghamshire, England
- 1991 - Present Cancer Treatment Centers of America  
Zion, Illinois
- 1994 - Present Applied Immune Sciences  
Santa Clara, California 95054

**Editorial Boards:**

- 1992 - Present Cancer Biotherapy, Founder, (now Cancer Biotherapy & Radiopharmaceuticals) Editor-in-Chief
- 1990 - Present In Vivo, Editorial Board  
Natural Immunity and Cell Growth Regulation, Editorial Board
- 1988 - 1992 Molecular Biotherapy, Founder and Editor-in-Chief
- 1982 - 1989 Journal of Biological Response Modifiers (now Journal of Immunotherapy) Founder and Editor-in-Chief
- 1982 - 1985 Cancer Immunology and Immunotherapy, Editorial Board

**Major Research Interests:**

Cancer Biotherapy  
Biologicals and Biological Response Modifiers  
Investigative Trials in Clinical Oncology  
Cellular Therapy of Cancer  
Monoclonal Antibodies & Immunoconjugates in Cancer Treatment  
In Vitro Assays in Tumor Immunology  
Privatization of Cancer Research

Professional Employment (Continued)

1984 - Present	<p>Founder and Director          Biological Therapy Institute          357 Riverside Drive          Franklin, Tennessee 37064</p>
1984 - Present	<p>Clinical Professor of Medicine          Hematology/Oncology          University of Missouri          Columbia, Missouri 65212</p>
1984 - 1990	<p>Founder, Scientific Director and          Chairman of the Board          Biotherapeutics Inc.          (Now Response Technologies, Inc.          Technologies, Inc.)          Memphis, Tennessee 38117</p>
1984 - 1986	<p>Founder and Consultant          Biomedical Research Center          University of British Columbia          Vancouver, British Columbia V6T 2B5</p>
1980 - 1984	<p>Founding Director, Biological Response          Modifiers Program          Associate Director, Division of          Cancer Treatment          National Cancer Institute          Frederick, Maryland 21701</p>
1975 - 1980	<p>Founder and Director, Div. of Oncology          Associate Professor of Medicine          Associate Director, Cancer Center          Vanderbilt University Medical Center          Nashville, Tennessee 37232</p>

**Professional Employment Continued.**

1974 - 1975	Senior Investigator Laboratory of Immunodiagnosis National Cancer Institute Bethesda, Maryland 20205
1973 - 1974	Senior Investigator Cellular and Tumor Immunology Section Laboratory of Cell Biology National Cancer Institute Bethesda, Maryland 20205
1972 - 1973	Research Associate with Professor G. Mathe ICIG - Hospital Paul Brousse Villejuif, France
1971 - 1972	Clinical Associate, Cellular and Tumor Immunology Section Laboratory of Cell Biology National Cancer Institute Bethesda, Maryland 20205
1970 - 1971	Clinical Associate, Radiation Branch National Cancer Institute Bethesda, Maryland 20205
1968 - 1970	Internal Medicine Intern and Resident Vanderbilt University Hospital Nashville, Tennessee 37205

**Clinical Group Appointments:**

1976 - 1980	Principal Investigator - Vanderbilt Southeastern Oncology Study Group (NCI)
1978 - 1980	Principal Investigator - Vanderbilt Lung Cancer Study Group (NCI)
1986 - 1990	Founder and Group Chairman - National Biotherapy Study Group
1986-Present	Principal Investigator - Biological Therapy Institute - National Biotherapy Study Group

**Fellowship Experience:**

1970 - 1972 Medical Oncology Fellowship, National Cancer Institute -  
Bethesda, Maryland  
1967 PHS Cancer Clinical Fellowship, Lemuel Shattuck  
Hospital-Jamaica Plain - Boston, Massachusetts  
1967 PHS Cancer Clinical Fellowship, Ellis Fischel Cancer  
Hospital - Columbia, Missouri  
1965 PHS Student Research Fellowship, University of  
Missouri Medical School - Columbia, Missouri

**Honors, Awards and Societies:**

1967 Alpha Omega Alpha  
1970 Diplomat, National Board of Medical Examiners  
1975 Diplomat, American Board of Internal Medicine  
1975 Diplomat, Medical Oncology, American Board of  
Internal Medicine  
1976 American Association of Immunologists  
1976 International Society for Experimental Hematology  
1976 Williamson County Medical Society  
1977 Southern Medical Association  
1977 American Federation for Clinical Research  
1977 American Society for Clinical Oncology  
1978 American College of Physicians, Fellow  
1979 Southern Society for Clinical Investigation  
1982 American Osler Society  
1984 Society for Biological Therapy, Founder  
President - May 1984 to November 1986  
1984 Reticuloendothelial Society  
1986 National Biotherapy Study Group, Founder  
Group Chairman - 1986 to 1990  
1990 Association of Community Cancer Centers  
1994 International Cytokine Society  
1994 The American Association of Bioethics

**Licensure:**

Tennessee, Maryland and Missouri

### Major Accomplishments (Curriculum Vitae #)

#### Discovery of Natural Killer Cells

(#8, 9, 27, 28, 31, 46, 47, 56, 90, 92, 121, 157 323)

#### Development of improved therapy for small cell lung cancer

(#66, 69, 78, 80, 85, 95, 103, 105, 108, 124, 177)

#### Development of improved therapy for ovarian cancer

(#99, 102, 125)

#### Development of improved methods in detecting and treating extragonadal germ cell tumors and other poorly differentiated tumors

(#22, 87, 93, 122, 123, 227, 228; 5-Book)

#### Use of cryopreserved cells for standardized immunological testing

(#37, 38, 40, 41, 45, 49, 52, 120)

#### Cancer Biotherapy: first to use the term to describe a fourth modality of cancer treatment

(#109, 114, 119, 128, 129, 134, 137, 139, 141, 146, 151, 153, 154, 161, 169, 173, 174, 175, 176, 179, 181, 183, 184, 188, 193, 197, 204, 206, 212, 225, 240, 249, 250, 184, 188, 193, 197, 204, 206, 212, 225, 240, 249, 250, 252, 260, 261, 262, 264, 265, 266, 267, 301, 302, 314, 319, 322, 324, 325, 332, 333, 338, 339, 340, 343, 344, 346, 349, 356, 357, 358, 360, 361, 362, 363) 10 Books)

#### Monoclonal antibodies and immunoconjugates in cancer treatment: Did groundbreaking experiments with toxin, drug and isotope conjugates

(#125, 126, 140, 143, 144, 145, 150, 152, 155, 156, 159, 160, 165, 180, 181, 182, 185, 187, 195, 196, 198, 199, 206, 218, 223, 224, 235, 238, 241, 244, 246, 247, 248, 251, 253, 254, 263, 278, 279, 285, 286, 287, 288, 291, 306, 307, 310, 311, 318, 325, 327, 342, 347)

#### Cytokine and Cellular Therapy: Conducted some of initial clinical experiments with IL-2 in LAK and T cell therapy

(#249, 255, 259, 281, 290, 294, 295, 298, 301, 302, 309, 311, 314, 322, 324, 332, 333, 349, 356, 357, 358, 361, 362)

#### Individualized Cancer Treatment: Conducted specific laboratory and clinical experiments demonstrating that each cancer in each patient has unique characteristics which may require unique, individualized treatment

(#267, 279, 285- 288, 291, 306, 307, 310, 318, 325, 327, 342, 347)

#### Privatization of Cancer Research: Brought attention to clinical research opportunities in the private sector. Published widely on problems of access to new technologies and the funding of clinical research

(#134, 205, 206, 207, 231, 236, 245, 256, 257, 268, 269, 282, 284, 289, 293, 308, 312, 316, 317, 319, 321, 325, 326, 330, 331, 334, 335, 350, 352, 353, 354, 355, 358, 359, 364, 11-Books)

## Publications

Over 380 papers published in the medical/scientific literature

Thousands of abstracts, posters and presentations at various meetings on cancer research and treatment

Editor of Principles of Cancer Biotherapy, the first comprehensive textbook on the fourth modality of cancer treatment (Now in Third Edition).

Founding Editor of Cancer Biotherapy, (now Cancer Biotherapy & Radiopharmaceuticals), Molecular Biotherapy and the Journal of Biological Response Modifiers (now Journal of Immunotherapy).

Author or editor of thirteen books on cancer research and treatment

## BIBLIOGRAPHY

### Published Papers

- 1 Oldham, R K Terminal cancer - A patient oriented approach J Tenn Med Assoc , 63 206, 1970.
- 2 Oldham, R K Aseptic meningitis following the intrathecal injection of RJSA Radiology, 97 317, 1970
- 3 Oldham, R K Eosinophilic Granuloma South Med J , 64 978, 1971
- 4 Oldham, R K and Pomeroy, T C Vincristine induced inappropriate ADH syndrome South Med J , 65 1010-1012, 1972
- 5 Oldham, R K and Pomeroy, T C Treatment of Ewing's sarcoma with Adriamycin Cancer Chemotherapy Reports, 56 635-639, 1972
- 6 Oldham, R K and Pomeroy, T C Extramedullary plasmacytomas following successful radiotherapy of Hodgkin's disease Clinical and immunological aspects American J. Med , 54 761-767, 1973.
- 7 Oldham, R K , Larson, S M., and Givelber, H.M , Chretien, P B , and Johnson, R E. A preliminary study of <sup>51</sup>Cr-labeled platelets for evaluation of splenic sequestration in chronic lymphocytic leukemia J Nuclear Med , 37,219-222, 1973
- 8 Oldham, R K , Siwarski, D , McCoy, J L , Plata, E J , and Herberman, R B . Evaluation of a cell-mediated cytotoxicity assay utilizing <sup>125</sup>Iododeoxyuridine labeled tissue culture targets Nat Cancer Inst Monogr , 37 49-58, 1973
- 9 Oldham, R K., Herberman, R B Evaluation of cell-mediated cytotoxic reactivity against tumor associate antigen utilizing <sup>125</sup>Iododeoxyuridine labeled target cells J Immunol , 111 1862-1971, 1973
- 10 Lemevel, B P , Oldham, R K , Wells, S A , and Herberman, R B An evaluation of <sup>125</sup>Iododeoxyuridine as a cellular label for in vitro assays - Kinetics of incorporation and toxicity J Nat Cancer Inst , 51 1511-1558, 1973
- 11 Oldham, R K and Simmler, M C The use of cryopreserved lymphocytes and lymphoblasts in <sup>51</sup>Cr lymphocyte cytotoxicity In Weiner, R S , Oldham, R K , and Schwarzenberg, L (Eds ) The Cryopreservation of Normal and Neoplastic Cells, Inserm, Institute National de la Sante et de la Recherche Medicale Paris, pp 161 169, 1973
- 12 Oldham, R K and Simmler, M C Possible role of lymphocyte cytotoxicity in bone marrow grafting Trans. Proceed , 6 417, 1974
- 13 Jasmin, C , Bricout, F , Huraux, J M , Weiner, R., Oldham, R K., and Mathe, G. A study of viral infections in patients treated with a combination of 6 meraptopurine-methotrexate. Preliminary results. In Mathe, G., and Oldham, R K (Eds ) Recent Results in Cancer Research Complications of Cancer Chemotherapy, Vol 49 New York, Springer-Verlag, pp 29-33, 1974

14. Mathe, G. and Oldham, R.K. Introduction. In Mathe, G. and Oldham, R.K. (Eds.): *Complications of Cancer Chemotherapy*. New York, Springer-Verlag, pp. 1-2, 1974.
15. Beard, J., Weiner, R.S., Oldham, R.K., and Mathe, G.: Immune responsiveness in acute lymphocytic leukemia patients under chemotherapy and immunotherapy. A preliminary report. In Mathe, G. and Oldham, R.K. (Eds.): *Recent Results in Cancer Research: Complications of Cancer Chemotherapy*. New York, Springer-Verlag, pp. 56-60, 1974.
16. Belpomme, D., Carde, P., Oldham, R.K., Mathe, G., Jacquillat, N., Chelloul, N., Weil, M., Auclerc, C., Weisgerber, G., Tanzer, T., and Bernard, J.: Malignancies possibly secondary to anticancer therapy. In Mathe, G. and Oldham, R.K. (Eds.): *Recent Results in Cancer Research: Complications of Cancer Chemotherapy*. New York, Springer-Verlag, pp. 115-123, 1974.
17. Mathe, G., Schwarzenberg, L., Pouillart, P., Wiener, R., Oldham, R.K., Jasmin, C., Hayat, M., Schneider, M., Amiel, J.L., Ceoara, B., and Steresco-Musset, M.: Essai de Traitement de divers hematiosarcomas par le 4-demethyl-epipodophyllotoxine beta.D. thenylidene glucoside (VM 26 ou EPT). *La Nouvelle Presse Med.*, 3:337-451, 1974.
18. Mathe, G., Schwarzenberg, L., Pouillart, P., Wiener, R., Oldham, R.K., Jasmin, C., Hayat, M., Schneider, M., Amiel, J.L., Ceoara, B., and Steresco-Musset, M.: Leucemies aigues et hematiosarcomas divers: Essai de traitement par un second derive de la podophyllotoxine (le 4-Demethylepipodophyllotoxine Beta.D. ethylidene glucoside VP16-213 ou EPE). *La Nouvelle Presse Med.*, 3:521-524, 1974.
19. Mathe, G., Schwarzenberg, L., Pouillart, P., Oldham, R.K., Wiener, R., Jasmine, C., Hayat, M., Schneider, M., Amiel, J.L., de Vassal, F.: Two epipodophyllotoxin derivatives, VP 26 and VP16-213 in the treatment of leukemias and hemtiosarcomas. In Bucalossi, P., Veronesi, U., Bonadonna, G., and Emanuele, H. (Eds.): *I Linfomi Maligni*. Milano, Casa Editrice Ambrosiana, pp. 303-309, 1974.
20. Mathe, G., Schwarzenberg, L., and Oldham, R.K.: le controle et le traitement de l'insuffisance medullaire qui peut compliquer les lymphomes et/ou leurs traitements. In Bucalossi, P., Veronesi, U., Bonadonna, G., and Emanuele, I. (Eds.): *I Linfomi Maligni*. Milano, Casa Editrice Ambrosiana, pp. 359-365, 1974.
21. Herberman, R.B., Char, D., Oldham, R.K., Levine, P., Leventhal, B.G., and McCoy, J.L.: Cell-mediated immunity in human acute leukemia. In Ito, Y., and Dutcher, R.M. (Eds.): *Comparative Leukemia Research*. University of Tokyo/Karger, pp. 585-592, 1974.
22. Mathe, G., Schwarzenberg, L., Pouillart, P., Oldham, R.K., Weiner, R., Kasom, C., Hayat, M., Schneider, M., Amiel, J.L., and de Vassa, F.: Two epipodophyllotoxin derivatives, VP 26 and VP16-213, in the treatment of leukemias and hematiosarcomas. *Cancer* 34:985-992, 1974.
23. Herberman, R.B., Hollinshead, A., Char, D., Oldham, R.K., McCoy, J.L., and Cohen, M.: In vivo and in vitro studies of cell-mediated immune response to antigens associated with malignant melanoma. In *International Symposium on Immuno-logical Reactions to Melanoma Antigens*. Behring Institute Research Communications, Behringwerke AG. West Germany, Marburg Publisher, No. 56, pp. 131-138, 1974.

24. Herberman, R.B., Char, D.H., Oldham, R.K., and Leventhal, B.G. The prognostic value of studies of specific cell-mediated immunity in acute leukemia. In T.M. Fleidner and S. Perry (Eds.): *Advances in the Biosciences 14. Workshop on Prognostic Factors in Human Acute Leukemia*. Branschweig, West Germany, Friedr. Viewegh and Sohn, pp. 431-440, 1975.
25. Pouillart, P., Weiner, R., Scharzenberg, L., Missot, J.L., Oldham, R.K., Amiel, J.L., Mathe, G. Combination chemotherapy based on a model of cell recruitment by partial synchronization. *Med. and Ped. Oncology.*, 1:123-134, 1975.
26. McCoy, J.L., Jerome, L.F., Dean, J.H., Perlin, E., Oldham, R.K., Char, D.H., Cohen, M.H., Felix, E.L., and Herberman, R.B.: Inhibition of leukocyte migration by tumor-associated antigens in soluble extract of human malignant melanoma. *J. Natl. Cancer Inst.*, 55:19-23, 1975.
27. Herberman, R.B. and Oldham, R.K.: Problems associated with study of cell-mediated immunity to human tumors by microcytotoxicity assays. *J. Natl. Cancer Inst.*, 55:749-753, 1975.
28. Oldham, R.K., Djeu, J.Y., Cannon, G.B., Siwarski, D., Herberman, R.E.: Cellular microcytotoxicity in human tumor systems: Analysis of results. *J. Natl. Cancer Inst.*, 55:1305-1318, 1975.
29. Catalona, W.L., Oldham, R.K., Djeu, J.Y., Herberman, R.B., and Cannon, G.B. Specificity of in vitro cellular cytotoxicity against transitional cell carcinoma cell line T-24. *Surgical Forum*, 26:122-124, 1975.
30. Law, I.P., Koch, F.J., Cannon, G.B., Herberman, R.B., and Oldham, R.K.: Acute myelomonocytic leukemia associated with paraproteinemia. *Cancer*, 37:1358-1364, 1976.
31. Oldham, R.K., Weiner, R.S., Mathe, G., Breard, J., Simmler, M.C., Carde, P., and Herberman, R.B.: Cell-mediated immune responsiveness of patients with acute lymphocytic leukemia in remission. *Int. J. Cancer*, 17:326-337, 1976.
32. McCoy, J.L., Dean, J.H., Cannon, G.B., Maurer, B.A., Oldham, R.K., and Herberman, R.B.: Detection of cell-mediated immunity against tumor associated antigens of human breast carcinoma by migration inhibition and lymphocyte stimulation assays. In J. Wybran and M. Staquet (Eds.): *Clinical Tumor Immunology*. Oxford, England, Pergamon Press, pp. 77-86, 1976.
33. Campbell, D.A., Oldham, R.K., Ortaldo, J.R., Nunn, M.E., Holden, H.T., Herberman, R.B.: Effect of X-irradiation on tumor associated antigens. In Neibings, H.E. (Eds.): *Detection and Presentation of Cancer*. New York, Marcel Dekker, Inc., pp.447-465, 1978.
34. Herberman, R.B., Campbell, D.A., Jr., Oldham, R.K., Bonnard, G.D., Ting, C.C., Holden, H.T., Glaser, M., Djeu, J., and Oehler, R.: Immunogenicity of tumor antigens. *Ann. N.Y. Acad. of Sci.*, 276:26-39, 1976.
35. Oldham, R.K. and Herberman, R.B.: Determination of cell-mediated cytotoxicity by the 125Iododeoxyuridine microcytotoxicity assays. Bloom, B.R., and David, J.R. (Eds.): In: *In Vitro Immunity*. Academic Press, New York, pp. 461-470, 1976.

36. Herberman, R.B., Oldham, R.K., Connor, R.J.: Statistical analysis and selection of baseline control in cytotoxicity assays. Bloom, B.R. and David, J.R. (Eds.): *In: In Vitro Methods in Cell Mediated and Tumor Immunity*. Academic Press, New York, 481-488, 1976.
37. Holden, H.T., Oldham, R.K., Ortaldo, J.R., Herberman, R.B.: Cryopreservation of the functional reactivity of normal and immune leukocytes and of tumor cells. Bloom, B.R. and David, J.R. (Eds.) *In: In Vitro Methods in Cell Mediated and Tumor Immunity*. Academic Press, New York, pp. 723-729, 1976.
38. Ortaldo, J.R., Oldham, R.K., Holden, H.T., Herberman, R.B.: Immune response to Gross virus induced lymphoma: Cryopreservation of functional activity of rat lymphocytes and tumor cells. *Cell. Immunol.* 25:60-73, 1976.
39. McCoy, J.L., Jerome, L.F., Anderson, C., Cannon, G.B., Alford, T.C., Connor, R.J., Oldham, R.K., and Herberman, R.B.: Leukocyte migration inhibition by soluble extracts of MCF-7 tissue culture cell line derived from breast carcinoma. *J. Natl. Cancer Inst.* 57:1045-1049, 1976.
40. Oldham, R.K., Dean, J., Cannon, G.B., Graw, R., Dunston, G., Applebaum, F., McCoy, J., Djeu, J. and Herberman, R.B.: Cryopreservation of human lymphocyte function as measured by *in vitro* assays. *Int. J. Cancer*, 18:145-155, 1976.
41. Oldham, R.K., Weese, J.L., Herberman, R.B., Perlin, E., Mills, M., Heim, W., Blom, J., Green, D., Reid, J., Bellinger, S., Law, I., McCoy, J.L., Dean, J.H., Cannon, G.B., Djeu, J.: Immunological monitoring and immunotherapy in carcinoma of the lung. *Int. J. Cancer*, 18:739-749, 1976.
42. Campbell, D.A., Manders, E.K., Oehler, J.R., Bonnard, G.D., Oldham, R.K., Herberman, R.B.: Inhibition of *in vitro* lymphoproliferative response by *in vivo* passaged rat 13762 mammary adenocarcinoma cells. I: Characteristics of inhibition and evidence for an infectious agent. *Cell. Immunol.*, 33:363-377, 1977.
43. Campbell, D.A., Jr., Staal, S.P., Manders, E.K., Bonnard, G.D., Oldham, R.K., Salzman, L.A., Herberman, R.B.: Inhibition of *in vitro* lymphoproliferative responses by *in vivo* passaged rat 13762 mammary adenocarcinoma cells. II: Evidence that Kilham rat virus is responsible for the inhibitory effect. *Cell. Immunol.* 33:378-391, 1977.
44. Djeu, J., Payne, S., Alford, C., Heim, W., Pomeroy, T., Cohen, M., Oldham, R.K., Herberman, R.B.: Detection of decreased proportion of lymphocytes forming rosettes with sheep erythrocytes at 29 C in the blood of cancer patients: Analysis of factors affecting the assay. *Clinical Immunol. and Immunopath.* 8:405-412, 1977.
45. Holden, H.T., Oldham, R.K., Ortado, J.R., and Herberman, R.B.: Standardization of the <sup>51</sup>Cr release cell-mediated cytotoxicity assay: Cryopreservation of mouse effector and target cells. *J. Natl. Cancer Inst.* 58:611-622, 1977.
46. Oldham, R.K., Ortaldo, J., Herberman, R.B.: Natural cytotoxic reactivity of rat lymphocytes as measured by the (<sup>125</sup>I) iododeoxyuridine and tritiated proline microcytotoxicity assays in the Gross virus induced lymphoma system. *Cancer Res.* 32:4457-4463, 1977.

86. Lojek, M.A., Fer, M.F., Oldham, R.K., Greco, F.A., Roger, L.W.: Cushing's syndrome with metastatic nonkeratinizing carcinoma of the cervix. Report of a case and literature review. *Am. J. Med.*, 69:140-144, 1980.
87. Williams, S.D., Einhorn, L.H., Greco, F.A., Oldham, R.K., Fletcher, R.: VP-16-213. Salvage therapy for refractory germinal neoplasms. *Cancer*, 46:2154-2158, 1980.
88. Reid, J.W., Perlin, E., Oldham, R.K., Weese, J.L., Heim, W., Mills, M., Millar, C., Blom, J., Green, D., Ballinger, S., Cannon, G.B., Law, I., Connor, R., Herberman, R.B.: Immunotherapy of carcinoma of the lung with intradermal BCG and allogenic tumor cells: a clinical trial. In Terry, W. (Ed.) *Immunotherapy of Cancer: Present Status of Trials in man*. New York, Raven Press, 1980.
89. Knost, J.A., Reynolds, V., Greco, F.A., Oldham, R.K.: Adjuvant chemoimmunotherapy stage I/II malignant melanoma. *J. Surg. Oncol.*, 19:165-170, 1982.
90. Forbes, J.T., Niblack, G.D., Fuchs, R., Richie, R.E., Johnson, H.K., and Oldham, R.K.: Human natural cell-mediated cytotoxicity I. Levels in peripheral blood, cord blood, and thoracic duct lymphocytes. *Cancer Immunol. and Immunother.*, 11:139-146, 1981.
91. Forbes, J.T., Greco, F.A., Oldham, R.K.: Human natural cell-mediated cytotoxicity II. Levels in neoplastic disease. *Cancer Immunol. and Immunother.*, 11:139-146, 1981.
92. Forbes, J.T., Oldham, R.K.: Kinetic analysis of specificity in human natural cell-mediated cytotoxicity. In Herberman, R.B. (Ed.): *Natural Cell-Mediated Immunity Against Tumors*. New York, Academic Press, 819-834, 1980.
93. Richardson, R., Schoumacher, R., Oldham, R.K., Fer, M., Hande, R., Forbes, J.T., and Greco, F.A.: The unrecognized extragonadal germ cell cancer syndrome. *Ann. Int. Med.*, 94:181-186, 1981.
94. Greco, F.A., Hande, R.K., Richardson, R.L., and Oldham, R.K.: High dose methotrexate in combination chemotherapy in small cell lung cancer. In Mathe and Muggia, (Eds.): *Recent Results in Cancer Research*. New York, Plenum Press, 74:50-55, 1980.
95. Greco, F.A., Oldham, R.K.: Combined therapy in limited stage small cell bronchial carcinoma. In Whitehouse, M. and Williams, C. (Eds.): *Recent Advances in Clinical Oncology*. London, England, Churchill Livingstone, 325-339, 1982.
96. Gail, M.H., Oldham, R.K., Holmes, E.C., Wright, P.W., McGuire, W.B., Mountain, C.F., Lukeman, J.M., Feld, R., Hill, L.D., Eagan, R.T., Pearson, F.G., and Lung Cancer Study Group: Early of intrathoracic BCG therapy in patients with non-stage I lung cancer: data from a randomized double-blind controlled trial by the lung cancer study group. *Cancer Immunol. and Immunother.* 10:129-137, 1981.
97. Knost, J.A., Oldham, R.K., Hande, K.R., Rhamy, R.K., Greco, F.A.: The combination of vinblastine and bleomycin in metastatic renal cell carcinoma. *Cancer Treat. Rep.*, 65:349-350, 1981.
98. Knost, J.A., Greco, F.A., Hande, K.R., Richardson, R.L., Fer, M.F., Oldham, R.K.: Cyclophosphamide, Doxorubicin, and Cis-Platinum in the treatment of advanced non-small cell lung carcinoma. *Cancer Treat. Rep.*, 65:941-946, 1981.

- 99 Oldham, R.K., Julian, C.G., Burnett, L.S., Richardson, R.L., Hande, K.R., Greco, F.A. Combination chemotherapy and restaging of advanced ovarian carcinoma. In Whitehouse, M. and Williams, C. (Eds): *Recent Advances in Clinical Oncology*. London, England, Churchill Livingstone, 165-179, 1982.
- 100 Dooley, W.C., Oldham, R.K. Possible association between radiation exposure and chromosome changes. *Lancet*, 2(8185):98, 1980.
- 101 Fer, M.F., Greco, F.A., Haile, K.L., Rosenblatt, P.A., Johnson, R.L., Glick, A.D., Oldham, R.K. Unusual survival after pulmonary artery sarcoma. *South Med J*, 74:624-627, 1981.
- 102 Greco, F.A., Julian, C.G., Richardson, R.L., Burnett, L., Hande, K.R., Oldham, R.K. Advanced ovarian cancer: brief intensive combination chemotherapy and second look operation. *Obstet. Gynecol.*, 58:199-205, 1981.
- 103 Greco, F.A., Oldham, R.K. Clinical management of patients with small cell lung cancer. In Greco, F.A., Oldham, R.K., Bunn, P.A. (Eds.): *Small Cell Lung Cancer*. New York, Grune and Stratton, 353-379, 1981.
- 104 Greco, F.A., Hainsworth, J.D., Sismani, A., Richardson, R.L., Hande, K., Oldham, R.K. Hormone production and paraneoplastic syndromes. In Greco, F.A., Oldham, R.K., Bunn, P.A. (Eds.): *Small Cell Lung Cancer*. New York, Grune and Stratton, 177-223, 1981.
- 105 Forbes, J.T., Greco, F.A., Oldham, R.K. Immunobiology of small cell lung cancer. In Greco, F.A., Oldham, R.K., Bunn, P.A. (Eds.): *Small Cell Lung Cancer*. New York, Grune and Stratton, 327-353, 1981.
- 106 Oldham, R.K. Biological response modifier therapy. An overview. *The Cancer Bulletin*, 33: 244-250, 1981.
- 107 Lyles, J.N., Burish, T.G., Krozely, M.G., and Oldham, R.K. Efficacy of relaxation training and guided imagery in reducing the aversiveness of cancer chemotherapy. *J. Con. Psychol.*, 50: 509-524, 1982.
- 108 Hande, K.R., Oldham, R.K., Fer, M.F., Richardson, R.L., and Greco, F.A. Randomized study of high-dose vs. low-dose methotrexate in the treatment of extensive stage small cell lung cancer. *Am. J. Med.* 73: 413-419, 1982.
- 109 Oldham, R.K. Biological Response Modifier Program and cancer chemotherapy. *Int. J. Tiss. React.* IV (3) 173-188, 1982.
- 110 Fidler, I.J., Berendt, M. and Oldham, R.K. The rationale for and design of screening assays for the assessment of biological response modifier for cancer treatment. *J. Biol. Response Modif.*, 1:15-26, 1982.
- 111 Knost, J.A., Sherwin, S., Abrams, P., and Oldham, R.K. Increased steroid dependence after recombinant leukocyte interferon therapy. *Lancet*. II (8258):1287-1288, 1981.

- 124 Fer, M.F., Sherwin, S.A., Oldham, R.K., Greco, F.A., Matthews, M.J.: Poorly differentiated lung cancer. *In* Fer, M.F., Greco, F.A., and Oldham, R.K. (Eds): Poorly Differentiated Neoplasms and Tumors of Unknown Origin, Seminars in Oncology, Vol.9, No.4, New York, Grune and Stratton, 456-466, 1982.
- 125 Key, M.E., Bernhard, M.I., Hoyer, L.C., Foon, K.A., Oldham, R.K., and Hanna, Jr., M.G.: Guinea pig 10 hepatocarcinoma model for monoclonal antibody serotherapy: *In vivo* localization of a monoclonal antibody in normal and malignant tissues. *J. Immunol.*, 139: 1451-1457, 1983
- 126 Foon, K.A., Bernhard, M., Oldham, R.K.: Monoclonal antibody therapy assessment by animal tumor models. *J. Biol. Response Modif.*, 1: 277-304, 1982.
- 127 Fer, M.F., McKinney, T.D., Richardson, R.L., Hande, K.R., Oldham, R.K., Greco, F.A.: Cancer and the Kidney. Renal Complications of Neoplasms. *In* Clark, Cumley, Kickey (Eds): 1982 Year Book of Cancer. Chicago, Yearbook Medical Publishers 286-288, 1983.
- 128 Oldham, R.K. and Smalley, R.V.: Immunotherapy. The old and the new. *J. Biol. Response Modif.*, 2: 1-37, 1983
- 129 Oldham, R.K.: Guest Editorial. Biological Response Modifiers. *J. Natl. Cancer Inst.*, 70: 789-796, 1983.
- 130 Oldham, R.K.: Biological Response Modifiers Program. *In* Hadden, J.W., Chedid, P., Spreafico, F., Willoughby, D., (Eds): Advances in Immunopharmacology 2., London, Pergamon Press, pp 655-660, 1982.
- 131 Sherwin, S.A., Mayer, D., Ochs, J.J., Abrams, P.G., Knost, J.A., Foon, K.A., Fein, S. and Oldham, R.K.: Recombinant leukocyte A interferon in advanced breast cancer; Results of a Phase II efficacy trial. *Annals Int. Med.*, 98: 598-602, 1983.
- 132 Herberman, R.B. and Oldham, R.K.: Cell-mediated cytotoxicity against human tumors: Lessons learned and future prospects. *J. Biol. Response Modif.*, 2: 111-120, 1983
- 133 Oldham, R.K.: Toxic effects of interferon. *Science*, 219: 902, 1983.
- 134 Oldham, R.K.: Biologicals: New horizons in pharmaceutical development. *J. Biol. Response Modif.*, 2: 199-206, 1983.
- 135 Maluish, A.E., Ortaldo, J.R., Conlon, J.C., Sherwin, S.A., Leavitt, R., Strong, D.M., Weimik, P., Oldham, R.K. and Herberman, R.B.: Depression of natural killer cytotoxicity following *in vivo* administration of recombinant leukocyte Interferon. *J. Immunol.*, 131: 503-507, 1983
- 136 Oldham, R.K.: Monoclonal antibodies as anticancer agents. *In* Klein, T., Spector, S., Szentivanyi, A., and Friedman, H. (Eds): Biological Response Modifiers in Human Oncology and Immunology, New York, Plenum Press, 45-58, 1983

137. Knost, J.A., Sherwin, S.A., Abrams, P.G., Ochs, J.J., Foon, K.A., Williams, R., Tuttle, R. and Oldham, R.K. The treatment of cancer patients with human lymphoblastoid interferon. A comparison of two routes of administration. *Cancer Immunol. and Immunother.*, 15:144-148, 1983.
138. Stevenson, H.C., Berman, J.A., and Oldham, R.K. The design of a cytopheresis program for cancer immunology research. *Plasma Therapy*, 4:57-63, 1983.
139. Hanna, Jr., M.G., Key, M.E., Oldham, R.K. Biology of cancer therapy. Some new insights into adjuvant treatment of metastatic solid tumors. *J. Biol. Response Modif.*, 4:295-309, 1983.
140. Bernhard, M.I., Foon, K.A., Oeltmann, T.N., Key, M.E., Hwang, K.M., Clarke, G.C., Christensen, W.L., Hoyer, L.C., Hanna, Jr., M.G. and Oldham, R.K. Guinea pig line 10 hepatocarcinoma model: Characterization of monoclonal antibody and *in vivo* effect of unconjugated antibody and antibody conjugated to diphtheria toxin A chain. *Cancer Res.* 43:4420-4428, 1983.
141. Oldham, R.K. Biological Response Modifiers Program. *Cancer Treat. Symposia*, 1:19-27, 1983.
142. Thurman, G.B., Stull, H.B. and Oldham, R.K. The effects of human interferon on the migration of guinea pig peritoneal exudate cells. In Oppenheim, J.J. and Cohn, S. (Eds): *Interleukines, and Cytokines*, New York, Academic Press, 277-286, 1983.
143. Oldham, R.K. Current status of monoclonal antibodies in cancer therapy. *Clinical Immunology Newsletter* 14:132-136, 1983.
144. Abrams, P.G., Knost, J.A., Clarke, G., Wilburn, S., Oldham, R.K. and Foon, K.A. Determination of the optimal human cell lines for human hybridomas. *J. Immunol.* 131:1201-1204, 1983.
145. Oldham, R.K., Monoclonal antibodies in cancer therapy. *J. Clin. Onc.* 1:582-590, 1983.
146. Oldham, R.K. Biological Response Modifiers Program: Subcommittee report. *J. Natl. Cancer Inst. Monograph* 63:235-247, 1983.
147. Smalley, R.V. and Oldham, R.K. Interferon as a biological response modifying agent in clinical trials. *J. Biol. Response Modif.* 2:401-408, 1983.
148. Maluish, A.E., Ortolano, J.R., Sherwin, S.A., Oldham, R.K., and Herberman, R.B. Changes in immunological function in patients receiving natural leukocyte interferon. *J. Biol. Response Modif.* 2:418-427, 1983.
149. Maluish, A.E., Leavitt, R., Sherwin, S.A., Oldham, R.K. and Herberman, R.B. Effects of recombinant alpha interferon on immune function in cancer patients. *J. Biol. Response Modif.* 2:470-481, 1983.
150. Bernhard, M.I., Hwang, K.M., Foon, K.A., Keenan, M., Kessler, R.M., Frincke, J.M., Tallam, D.J., Hanna, Jr., M.G., Peters, L., Oldham, R.K. Localization of <sup>111</sup>In- and <sup>125</sup>I-labeled monoclonal antibodies in guinea pigs bearing line 10 hepatocarcinoma tumors. *Cancer Res.* 43:4429-4433,

1983

- 151 Akiyama, Y., Miller, P. J., Thurman, G. B., Neubauer, R. H., Oliver, C., Favilla, T., Beman, J. A., Oldham, R. K. and Stevenson, H. C.: Characterization of a human blood monocyte subset with low peroxidase activity. *J. Clin. Invest.* 72:1093-1105, 1983
152. Weinstein, J. N., Steller, M. A., Keenan, A. M., Covell, D. G., Key, M. E., Sieber, S. M., Oldham, R. K., Hwang, K. M. and Parker, R. J.: Monoclonal antibodies in the lymphatics: Selective delivery to lymph node metastases of a solid tumor. *Science*, 222:423-426, 1983
153. Stevenson, H. C., Miller, P., Akiyama, Y., Favilla, T., Beman, J. A., Herberman, R. B., Stull, H., Thurman, G., Maluish, A., and Oldham, R. K.: A system for obtaining large numbers of cryopreserved human monocytes purified by leukapheresis and counter-current centrifugation elutriation (CCE). *J. Immunol. Methods* 62:353-363, 1983
- 154 Oldham, R. K.: Biologicals and biological response modifiers: The fourth modality of cancer treatment. *Cancer Treat. Rep.* 68:221-232, 1984
- 155 Foon, K. A., Bunn, P. A., Schroff, R. W., Mayer, D., Iisu, S.-M., Sherwin, S. A. and Oldham, R. K.: Monoclonal antibody therapy of chronic lymphocytic leukemia and cutaneous T-cell lymphoma: Preliminary observations. In: Boss B. D., Langman, R. E. and Trowbridge, I. S. and Dulbecco, R. (Eds.): *Monoclonal Antibodies and Cancer*. New York, Academic Press. pp. 39-52, 1983.
- 156 Foon, K. A., Abrams, P. G., Rossio, J. L., Knost, J. A. and Oldham, R. K.: Human hybridomas: Comparison of human cell lines for production of human hybridomas and development of human hybridomas producing antigen-specific IgG using *in vivo* immunized peripheral blood cells as fusing partners. In: Boss, B. D., Langman, R. E. and Trowbridge, I. S. and Dulbecco, R. (Eds.): *Monoclonal Antibody and Cancer*. New York, Academic Press. pp. 143-155, 1983.
- 157 Oldham, R. K.: NK cells: Artifact to reality, an odyssey in biology. *Can. Metas. Rev.* 2:232-336, 1983
- 158 Talmadge, J. E., Oldham, R. K. and Fidler, I. J.: Practical considerations for the establishment of a screening procedure for the assessment of biological response modifiers. *J. Biol. Response Modif.* 3:88-109, 1984.
- 159 Oldham, R. K., Morgan, A. C., Woodhouse, C. S., Schroff, R. W., Abrams, P. G. and Foon, K. A.: Monoclonal antibodies in the treatment of cancer: Preliminary observations and future prospects. *Med. Onc. and Tumor Pharm.* 1:51-62, 1984
- 160 Smalley, R. V., Foon, K. A., Schroff, R. W., Woodhouse, C., Morgan, A. C. and Oldham, R. K.: Monoclonal antibody therapy NCI (BRMP) supported trials in humans and guinea pigs. In: Herberman, R. B., Micksche, M. and Smalley, R. V. (Eds.): *Proc. 13th International Congress of Chemotherapy*. Alan R. Liss Inc., New York, N. Y., 35-45, 1983.
- 161 Smalley, R. V., Long, C., Sherwin, S. A. and Oldham, R. K.: Biological response modifiers. Current status and prospects as anticancer agents. In: Herberman, R. B. (Eds.): *Basic and Clinical tumor Immunology*. Netherlands, Martinus Nijhoff Pub. pp. 257-300, 1983

- 162 Smalley, R.V., Talmadge, J., Oldham, R.K., and Thurman, G.B.: The thymosins: preclinical and clinical studies with fraction V and alpha-1. *Cancer Treat. Rev.* 11:69-84, 1984.
- 163 Oldham, R.K. and Smalley, R.V.: Gamma Interferon: Early studies and potential applications. *Clin. Immunol. Newsletter* 5:69-73, 1984.
- 164 Talmadge, J.E., Maluish, A.E., Collins, M., Schneider, M., Herberman, R.B., Oldham, R.K., Wiltout, R.H.: Immunodulation and anti tumor effects of MVE-2 in mice, *J. Biol. Response Modif.* 3:634-652, 1984.
- 165 Abrams, P.G., Ochs, J.J., Giardina, S.L., Morgan, A.C., Wilburn, S.B., Wilt, A.R., Oldham, R.K. and Foon, K.A.: Production of large quantities of human immunoglobulin in the peritoneum athymic mice: Implications for the development of anti-human idiotype monoclonal antibodies. *J. Immunol.* 132:1611-1613, 1984.
- 166 Stevenson, H.C., Schlick, E., Griffith, R., Chirigos, M.A., Brown, R., Conlon, J., Kanapa, D.J., Oldham, R.K. and Miller, P.: Characterization of biological response modifier release by human monocytes cultured in suspension in serum free medium. *J. Immunol. Meth.* 70:245-255, 1984.
- 167 Fei, M.P., Benman, J., Stevenson, H., Maluish, C., Delawter, T., Foon, K.A., Herberman, R., Oldham, R.K., with Terman, D., Young, J., and Daskal, Y.: A trial of autologous plasma perfusion over protein A in patients with breast cancer. *J. Biol. Response Modif.* 3:352-358, 1984.
- 168 Francisco, R., Omura, G.A., Birch, R., Krauss, S., Oldham, R.K.: Randomized phase III comparison of three doxorubicin based chemotherapy regimens in advanced non-small cell lung cancer. *J. Clin. Onc.* 2:391-395, 1984.
- 169 Smalley, R.V. and Oldham, R.K.: Biological Response Modifiers: Preclinical evaluation and clinical activity. *CRC Critical Reviews in Oncology/Hematology* 1:259-280, 1984.
- 170 Thurman, G.B., Stull, H.B., Miller, P.J., Stevenson, H.C. and Oldham, R.K.: Utilization of purified human monocytes in the agarose droplet assay for measuring migration inhibitory factors. *J. Immunol. Methods.* 65:41-53, 1984.
- 171 Talmadge, J.E., Lenz, B.F., Collins, M.S., Uithoven, K.A., Schneider, M.A., Adams, J.S., Pearson, J.W., Agee, W.J., Fox, R.E. and Oldham, R.K.: Tumor models to investigate the therapeutic efficiency of immunomodulators. Symposium on Models and Methods in the Immunotherapy and Chemotherapy of Cancer. *Behring Inst. Mitt* 74:219-229, 1984.
- 172 Oldham, R.K.: Introduction, Symposium on ex vivo plasma immunoabsorption and protein A in cancer therapy. *J. Biol. Response Modif.* 3:229-230, 1984.
- 173 Foon, K.A., Sherwin, S.A., Bunn, P.A., Longo, D. and Oldham, R.K.: Recombinant leukocyte interferon in the treatment of non-Hodgkin's lymphoma, chronic lymphocytic and cutaneous T-cell lymphoma. In: *Interferon: Research, Clinical Application, and Regulatory Consideration*, Zoon, K.A., Noguchi, P.C., and Lui, T.Y. (Eds.) Elsevier Science Publishing pp 219-227, 1984.